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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/726,297

12/02/2003

Hong H. Chan

110350-133009

5246

31817

7590

07/26/2005

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EXAMINER

TON, MY TRANG

ART UNIT

PAPER NUMBER

2816

DATE MAILED: 07/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/726,297

Applicant(s)

CHAN ET AL.

Examiner

My-Trang N. Ton

Art Unit

2816

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 16 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-28 and 30-37 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 22-28 and 30-32 is/are allowed.
- 6) ☒ Claim(s) 1, 2, 14-18 and 33-36 is/are rejected.
- 7) ☒ Claim(s) 3-13 and 19-21 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

MY-TRANG NUTON  
PRIMARY EXAMINER

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

***Response to Amendment***

In response to Applicant's amendment filed on 5/16/05, the rejection made in the last Office action on the Ilkbahar and Muljono references are withdrawn. A new Office action has been made as follows:

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-2, 14-18, 33-36 are rejected under 35 U.S.C. 102(e) as being anticipated by Lim et al (U.S Patent No. 6,696,860).

Lim et al disclose in Fig. 3 a variable voltage data buffers including:

a driver (50) to drive an output signal (OUT') having a plurality of low-to-high (LOW TO HIGH transition) and high-to-low signal transitions (HIGH TO LOW transition), with each of the signal transitions having a clock-to-output delay; and

a pre-driver (40) coupled to the driver (50), the pre-driver (40) having a first (41) and a second stage (43) to cooperatively generate a reshaped waveform to trigger the LH and HL signal transitions of the output signal (OUT'), with the first stage (41) generating an initial waveform and the second stage (43) modifying the initial waveform to generate the reshaped waveform based at least in part on a difference in the clock-

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to-output delays of the LH and HL signal transitions (due to 29 and 32) as recited in claim 1.

The first stage (41) is capable of setting a slew rate for the driver (50) and the second stage (43) is capable of changing the clock-to-output delay of one of the signal transitions of the output signal (OUT' due to 29 and 32) as recited in claim 2.

Regarding claim 14:

a driver (50) to generate an output signal (OUT'), a predriver (40) having a first and a second stage (41, 43) commonly coupled to the driver (50) and responsive to an input signal (BUF), a compensator (29, 32) coupled to the driver (50 via 40), the second stage (43) in communications with the compensator circuit (29, 32) to modify the pre-driver waveform.

The second stage (43) is capable of adjusting the rate of voltage change of the pre-driver waveform during the adjustment period as recited in claim 15.

The compensator circuit (29, 32) is capable of adaptively controlling the duration of the adjustment period as recited in claim 16.

Element 20 reads on a pre-driver control circuit as recited in claim 17.

The pre-driver control circuit (20) is capable of turning on the second stage (43) during the LH or HL switching delay period, and the second stage (43) is capable of increasing the rate of voltage change of the pre-driver waveform during the adjustment period as recited in claim 18.

The methods recited in claims 33-36 are similarly rejected as claims 14-18 above.

***Allowable Subject Matter***

Claims 3-13, 19-21 and 37 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. None of the prior art disclosed or suggested to show the particular structure and/or the particular operation recited in these claims namely: "a compensator circuit ... to provision of a feedback in a form of a control signal ..." as recited in claim 3; "a compensator circuit to generate a control signal having a feedback ..." as recited in claim 7; "a first voltage control delay element" and "a second voltage control delay element" as recited in claim 19; "a pattern generator ... to generate the measured quantity" and "a phase extraction circuit" as recited in claim 20; "a compensator circuit" in combination with "a control circuit" as recited in claim 29, "extracting the difference ... clock-to-output delays" as recited in claim 37.

Claims 22-28 and 30-32 are allowable over the prior art of record. None of the prior art disclosed or suggested to show the particular structure and/or the particular operation recited in these claims namely: the combination of "a pattern generator", "a first and second weak pre-driver stage", "a first and a second driver", "a compensator circuit" and "a first and a second strong pre-driver stage" as recited in claim 22; the combination of "a compensator circuit to extract a control signal ..." and "a control circuit coupled to the compensator circuit and the second stage and responsive to the control signal ... the switching delay periods" as recited in claim 28.

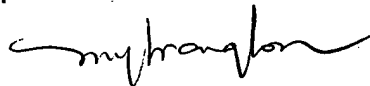
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In view of the above noted new grounds of rejection not necessitated by Applicants Amendments, this action is non-final.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to My-Trang N. Ton whose telephone number is 571-272-1754. The examiner can normally be reached on 7:00 a.m - 5:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Callahan can be reached on 571-272-1740. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



My-Trang N. Ton  
Primary Examiner  
Art Unit 2816

July 21, 2005